

A photograph of a pilot in a cockpit, wearing a cap and glasses, looking out over a city. The cockpit instruments and controls are visible. The pilot is holding the yoke with both hands. The city below is densely packed with buildings and greenery. The sky is clear with some light clouds.

KIMBERLY PYLE

Photos courtesy of ATO

# Let's Be Clear

## *Improving Pilot-Controller Communications*

**Y**ou are nearing the end of a long southbound flight to Elizabeth City, N. C. (KECG). You are focused on making the descent from the 7,000 MSL cruising altitude to the 1,012 MSL traffic pattern altitude. The tower controller clears you to land on runway “one zero.” You wanted, and thus unconsciously expected, a clearance to land on runway “zero one” since flying a downwind leg for runway zero one will give you more time to configure the airplane. The strategy works, but you realize the mistake when the controller quickly amends your clearance for landing on zero one.

Such mistakes happen on a regular basis. In fact, last year's FAA data indicate that a failure to comply with an air traffic control clearance for altitude, heading, or runway was a common pilot mistake, or deviation. Almost always these unintentional occurrences result from an innocent mistake.

Human factors are often involved. Sometimes pilots take the wrong clearance from air traffic control because their call sign sounds similar to another call sign on the same frequency. Sometimes it is because they have an "expectation bias," meaning they hear what they expect to hear and not what was actually said. And, sometimes it is just the result of a radio frequency that is not clear.

All humans make mistakes and, despite our best efforts, pilots are no different. But the consequences can be severe when the mistake is made in a machine traveling 200 miles an hour at 2,500 feet or higher.

So, what's a pilot to do?

"Don't be afraid to ask us to confirm a clearance," says Daniela Aguerre, an air traffic controller at Miami Center. "We are members of the same team, so if you aren't clear, ask us, no matter how busy we sound. We will slow down to help."

AOPA's *Flight Training* magazine offers the same advice.

*Regardless of the information transmitted, there should never be a question in a pilot's or controller's mind that both are talking about the same thing. If you have a question, 'verify' is the word you use to ensure you have the right information. For example, you say, 'Verify Hometown Tower on one-two-three-point-four,' if you think you mishear the tower frequency.*

(Excerpt from "New Pilot's Guide to ATC Communication" by Robert I. Snow)

Easier said than done? Even controllers will admit that asking them to repeat a clearance can be intimidating.

"I have heard that some pilots have a misconception of ATC—that we're mean or harsh," Aguerre said. "Because our phraseology is so prescribed and strict, it can make us sound unfriendly. We're not. We are really just following the rules."

FAA's Aeronautical Information Manual (AIM) includes phraseology guidance for pilots, but the requirements for controllers are more extensive. Controllers regularly have sessions with their supervisors, called "tape talks," where their

FAA's Aeronautical Information Manual (AIM) suggests the following:

#### **4-2-4. Aircraft Call Signs** **a. Precautions in the Use of Call Signs.**

1. Improper use of call signs can result in pilots executing a clearance intended for another aircraft. Call signs should *never be abbreviated on an initial contact or at any time when other aircraft call signs have similar numbers/sounds or identical letters/number*; e.g., Cessna 6132F, Cessna 1622F, Baron 123F, Cherokee 7732F, etc.

##### **EXAMPLE-**

*Assume that a controller issues an approach clearance to an aircraft at the bottom of a holding stack and an aircraft with a similar call sign (at the top of the stack) acknowledges the clearance with the last two or three numbers of the aircraft's call sign. If the aircraft at the bottom of the stack did not hear the clearance and intervene, flight safety would be affected, and there would be no reason for either the controller or pilot to suspect that anything is wrong. This kind of "human factors" error can strike swiftly and is extremely difficult to rectify.*

2. Pilots, therefore, must be certain that aircraft identification is complete and clearly identified before taking action on an ATC clearance. ATC specialists will not abbreviate call signs of air carrier or other civil aircraft having authorized call signs. ATC specialists may initiate abbreviated call signs of other aircraft by using the *prefix and the last three digits/letters* of the aircraft identification after communications are established. The pilot may use the abbreviated call sign in subsequent contacts with the ATC specialist. When aware of similar/identical call signs, ATC specialists will take action to minimize errors by emphasizing certain numbers/letters, by repeating the entire call sign, by repeating the prefix, or by asking pilots to use a different call sign temporarily. Pilots should use the phrase "VERIFY CLEARANCE FOR (your complete call sign)" if doubt exists concerning proper identity.

3. Civil aircraft pilots should state the aircraft type, model or manufacturer's name, followed by the digits/letters of the registration number. When the aircraft manufacturer's name or model is stated, the prefix "N" is dropped; e.g., Aztec Two Four Six Four Alpha.

##### **EXAMPLE-**

1. *Bonanza Six Five Five Golf.*

2. *Breezy Six One Three Romeo Experimental (omit "Experimental" after initial contact).*



transmissions are played back and every non-standard bit of phraseology is noted.

Despite never seeing each other's faces, pilots and controllers must work together with what Aguerre refers to as "blind trust."

**"Because our [ATC] phraseology is so prescribed and strict it makes us sound unfriendly. We're not."**

"Everyone plays a part," she says. "They have to trust we're giving them the right safety advice and we have to trust that they will follow it."

A member of the National Air Traffic Controllers Association's Safety Committee, Aguerre has five suggestions for GA pilots entering controlled airspace:

1. **Be brief on initial check-in.** This is mainly an issue when pilots are VFR. State call sign and request VFR flight following. Then, just answer the controller's questions briefly, such as position, aircraft type, and destination; additional information usually ties up the frequency. You can contact the controller later to ask questions or provide additional information. Use your judgment: You can usually tell when a controller is busy, so use that as a guide to how you use the frequency.
2. **Be attentive to the frequency, especially when VFR.** If a pilot asks for flight following, it is distracting to a controller when the pilot does not answer communications, especially traffic calls. Since there can be so many reasons why a pilot does not answer a call, it takes the controller's focus away from IFR traffic.

3. Especially in inclement weather, **ask controllers for deviations as many miles in advance as possible.** This allows controllers to plan for other traffic and coordinate with other ATC sectors or facilities. Also, be prepared to go with an alternate plan if at all possible, such as deviations to right instead of left, if that is what you requested.
4. **Give controllers PIREPS (pilot reports)!** Controllers can share the information with other pilots and get a more accurate picture of what the weather is doing.
5. **Ask, do not assume!** If you do not understand a clearance, use the words "Confirm" or "Verify." Controllers prefer to repeat or clarify a clearance (even when they are busy) rather than have a pilot execute the wrong clearance, which may cause problems for other aircraft in the sector.

FAA's Vice President for Air Traffic Technical Training, Dr. Robert Tarter, has his own advice for GA pilots traversing controlled airspace.

"Use your call sign, every time," Tarter says. This echoes the guidance in the AIM.

Last year, as part of the FAA's Partnership for Safety outreach to improve pilot-controller communication, Tarter visited 52 airlines across the country to encourage pilots to use call signs and professional phraseology in every transmission. The same best practices apply to GA pilots flying in controlled airspace. And, since communication errors are leading contributors to losses of separation and runway incursions, following these simple tips can make a big difference.

After all, the safety of your flight—the safety of all flights—is our highest priority.

*Kimberly Pyle is the program manager for the FAA's Partnership for Safety. She works in the Air Traffic Organization's Safety Office promoting better pilot-controller communications through outreach, awareness, and training.*

### For More Information

#### AOPA Flight Training "New Pilot's Guide to ATC Communication"

<http://flighttraining.aopa.org/students/presolo/special/atccomm.html>

#### FAA Aeronautical Information Manual, Chapter 4, Section 2: "Radio Communication Phraseology and Techniques"

[www.faa.gov/air\\_traffic/publications/ATpubs/AIM/Chap4/aim0402.html](http://www.faa.gov/air_traffic/publications/ATpubs/AIM/Chap4/aim0402.html)